The relative importance of visual and olfactory cues to onion thrips (*Thrips tabaci*) in host and non-host crops

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Onion thrips are a key pest in onion crops on a global scale and are known to respond to visual (e.g. coloured traps) and olfactory (e.g. ethyl isonicotinate (Ei)) cues. In order to better understand how such cues could be exploited to help manage this pest, an experiment was set up in an onion and an adjacent wheat crop to compare the relative importance of olfactory and visual cues in a host and non-host crop. Blue (visual cue) and green (non-visual cue) sticky traps were placed on poles at canopy height in both crops, both with and without an Ei lure (olfactory cue) in spring (2011) for 7 days. Approximately eight times more onion thrips were caught in the wheat field ($P=0.031$), than in the onion crop where very few were caught (151 total onion thrips). The olfactory cue was stronger than the visual cue in both crops. With the Ei lure, green traps caught around 2.7 (onion) or 33.0 (wheat) thrips, and blue traps caught around 3.0 (onion) or 35 (wheat) thrips on average. Without the lure, green traps caught less than 1 for both crops, while blue traps caught around 0.5 (onion) or 5.9 (wheat) thrips.

Effects of host and foundress density on reproductive strategy of *Diaeretiella rapae*

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The reproductive fitness of a parasitoid depends on the oviposition decisions of a female in response to competition. The present study investigated the oviposition and sex ratio of offspring produced by the parasitic wasp *Diaeretiella rapae* while competing with other conspecific females and at different host densities. The number of *Brevicoryne brassicae* nymphs parasitised by female *D. rapae* increased with the number of nymphs offered to them. However, the proportion of nymphs parasitised by the female decreased when nymph density was high. The proportion of fertilised eggs oviposited by females decreased when nymph density increased. An increase in the number of foundresses (females ovipositing together) increased the total parasitism, but the contribution of each female (the number of nymphs each female parasitised) decreased. Smaller proportions of female offspring were produced when females were competing for the same hosts. The results of this study suggest that both host and foundress densities asymmetrically affect progeny production and sex allocation in this species.